# THE MACRURA AND ANOMURA COLLECTED BY THE WILLIAMS GALAPAGOS EXPEDITION, 1923 

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(Figs. 39-41 incl.)
This collection, though not large in point of numbers, is of great interest in its extension of our knowledge of the carcinological fauna of the Galapagos Islands. In the crustacean collections made by the Hopkins Stanford Galapagos Expedition of 1898-99, and reported on by Dr. Mary J. Rathbun ${ }^{1}$ there were five macrurous forms not represented in the present one. On the other hand it gives us five new records for the Islands, two of which, Hippolyte williamsi and Lysmata galapagėnsis are apparently undescribed species, in addition to two already known from the Galapagos, but not returned by the Hopkins Expedition. En route three wellknown species of Sargascum shrimps were taken at several stations in West Indian waters, and a familiar fresh-water crayfish, or rather shrimp, from the Canal Zone.

Penaeopsis kishinouyei (Rathbun).
Parapenaeus kishinouyei Rathbun, Proc. Washington, Acad. Sci., vol. 4, 1902, p. 288, pl. 12, figs. 13-15.

Penaeopsis kishinouyei de Man, "Siboga" Exped., Monog. 39a, Decapoda, pt. 1, Penaeidae, 1911, pp. 8, 55.

Eden, off Indefatigable Island; dredged in five fathoms, April 1; 2 immature females.

Exopodites are present on all the legs, and epipodites on all but the last two pairs. The meri of the fifth legs of the males of the type lot are not notched, and the telson bears three pairs of lateral marginal spines.

The Eden specimens have respectively nine, and eight rostral teeth, counting the gastric one; the antero-lateral angle of the carapace is spinous.

This species is known only from the Galapagos Islands, "the types were taken at Tagus Cove, on the reef north of Tagus Hill, Albemarle Island," while four other specimens collected about the same time were "taken in 2 fathoms in Tagus Cove."

[^0]Crangon bouvieri var. chilensis (Coutière).
Alpheus bouvieri var. chilensis Coutière, Lenz, Zool. Jahrb., Suppl. vol. 5, 1902, p. 73.2.
Eden; rock pools, April 6; 1 specimen.
This species hitherto was known only from the three specimens of the type lot from Calbuco, Chile.

Synalpheus nobilii Coutière.
Synalpheus nobilii Coutière, Proc. U. S. Nat. Mus., vol. 36, 1909, p. 40, textfig. 22.
? Synalpheus neptunus Rathbun, Proc. Washington Acad. Sci., vol. 4, 1902, p. 289.


FIG. 39. SYNALPHEUS NOBILII COUTIĖRE
$a$, second leg of right side; $b$, third leg; $c$, dactyl of same, more enlarged.

Eden, rock pools; April 6; 1 specimen.
The large hand of this specimen has much the appearance of that of S. sanlucasi Coutière (op. cit., p. 41) with which Miss Rathbun had later identified her material from Albemarle Island. I have been unable to examine those specimens, as they are still in the hands of Prof. Coutière, who is monographing the National Museum Alpheids.

The proportions of the second legs of the specimen before me definitely set it apart from S. sanlucasi; and the antennules, antennae, spines, scales, and rostrum have the slender form as in S. fritzmiulleri and S. nobilii. On the basis of the stouter third legs it is identified with the latter rather than the former species.

The only other known specimen of the species is the type in the Paris Museum, from St. Helena, Ecuador.

## Hippolyte williamsi sp. nov. ${ }^{2}$

Type Locality.-Eden; rock pools, April 6;1 \& with carapace and rostrum together, but slightly more than 3.5 mm . in length.

Description.-Rostrum reaching four sevenths the length of the antennal scale, exceeding the antennular peduncle by about the length of the first two segments of the thicker flagellum, equalling about three fourths the length of the carapace; above the rostrum has two subequal teeth, the anterior of which is situated just behind the middle of the rostrum, and the first at about the distal third of the interval between the second tooth and the orbital margin; below there are three teeth of which the first is situated just before the distal margin of the first segment of the antennular peduncle, being about as far in advance of the second dorsal as that tooth is in front of the first dorsal, the second ventral is not quite half the distance between the first and third in advance of the former, the last tooth is immediately behind the acute tip, giving it a bifid appearance; on the dorsal margin a little in advance of the first ventral tooth, there is an inconspicuous tiny notch or tooth which might possibly be considered as a third dorsal. The last two joints of the antennular peduncle are subequal; taken together they are shorter than the first joint; antennal peduncle reaching to or just beyond the distal margin of the second antennular segment. Supra-orbital and branchiostegal spines well developed.

Distally, the outer, lateral face of the merus of the third legs is armed with three conspicuous spines, increasing in size from behind forwards, the largest, the anterior spine, is placed lower than the others; fourth leg with two such meral spines, of which the anterior is almost ventral; fifth leg with merus unarmed; carpal joints of last three pairs with a spine on outer face at about one third the length of the joint from the posterior margin; propodus of third leg short and stout, less than three times as long as the dactyl; the dactyls of the last three pairs of legs are quite powerful, stout and well spined, spines terminally quite strong, and set close together; posteriorly, the dactyls are produced, forming a peculiar, unarmed "heel." The third legs fall short of the end of the antennal scale, though they exceed its spine by about the length of the dactyl, the second legs and third maxillipeds reach about as far forward as the distal margin of the first joint of the antennular peduncle.

Fifth abdominal somite about two thirds the length of the sixth, sixth nearly as long as the telson which is slightly shorter than the inner branches of the uropods.

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FIG. 40. HIPPOLYTE WILLIAMSI, sp. nov.
$a$, lateral view of carapace; $b$, antennule; $c$, antennal scale; $d$, third maxilliped; $e$, first leg; $f$, second leg; $g$, third leg; $h$, dactyl of same, more enlarged; $i$, telson.

Remarks.-Our species seems to be quite distinct from the other known Hippolytids that may have a similar rostral formula, three teeth below and two or three above. Hippolyte pleuracantha (Stimpson) ${ }^{3}$ has two to three teeth above and three below, but the legs are much more slender and the dactyls have a different shape, being long and narrow instead of short and broad, they

[^2]have slender spines on the ventral margin and lack the "heel" found in H. williamsi; the propodus of the third leg of.H. pleuracantha is about six and one third times as long as its greatest width; in H. williamsi it is about four and one half times as long as wide, and the dactyl is armed with short stout spines. In H. obliqui-manus Dana ${ }^{4}$ from "Rio Janeiro," the dactyl and propodus of the third leg are proportioned as in H. pleuracantha; the rostrum has three teeth below if we count the ventral tooth of the bifid tip as figured in with the two described as constituting the armature of the lower margin; above there are four teeth; the rostrum is half again as long as the antennular peduncle. In H. pleuracantha, though the rostrum has been generally described as "about half as long as the carapace," "scarcely more than half as long as the acicle," and "reaching to extremity of antennular peduncle," in about half of the specimens I have examined, it is about as long as the scale, exceeding the antennular peduncle by about one half the length of the peduncle. Other than in the possession of a fourth tooth on the upper margin of the rostrum, I can detect but one other feature in Dana's figure of obliqui-manus, distinguishing it from H. pleuracantha. What might have been intended to represent the branchiostegal spine in the former species is situated on or at the anterior margin of the carapace, while in the latter, the tip of that spine is removed by distance at least half, and usually nearly the length of the spine from the anterior margin. H. williamsi has the branchiostegal spine placed so close to the anterior margin of the carapace that in part it extends beyond the margin. Heller's Mediterranean $H$. gracilis, ${ }^{5}$ has two to three teeth beneath, and three or four on the upper margin, but of the dorsal teeth, two were described as being "behind the eyes," at least one is on the carapace and the second about over the orbital margin, more or less; the branchiostegal spine is figured as being behind the margin, and the rostrum is about half again as long as the antennular peduncle. Hippolyte californiensis Holmes, ${ }^{6}$ though it may have as few as three teeth below and the same number above, need not be considered here, because of its vastly different form; the tip of the rostrum is usually trifid, the second joint of the antennular peduncle is two to three times as long as the third and more than twice as long as wide, and the sixth abdominal somite is twice as long as the fifth and longer than the telson.

## Lysmata galapagensis sp. nov.

Type Locality.—Northeast of Eden; seven fathoms, dredged, April 6; 56 specimens. The carapace and rostrum of the figured female together are about 6 mm . long.

Description.-Rostrum about four ninths the length of the carapace, as long as, or a little longer than the eyestalks, and reaching the distal margin of the first segment of the antennular peduncle; rostral crest is continued backward onto the anterior third of the carapace; above it is usually armed with five or six, more rarely, seven teeth, of which one, less often two are on the carapace; as in the figured specimen there is always a decided hump between the first and

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FIG. 41. LYSMATA GALAPAGENSIS, sp. nov.
$a$, lateral view of carapace; $b$, antennule; $c$, antennal scale; $d$, third maxilliped; $e$, first leg; $f$, second leg; $g$, third leg; $h$, dactyl of third leg of another specimen; $i$, dactyl of third specimen; $j$, telson.
second teeth from which arises a conspicuous long hair and maybe one or two smaller ones; similarly hairs occur at about the mid-points of the intervals between the other teeth and the last tooth and the rostral tip as well, but the humps marking their insertion are much less pronounced; the interval between the first and second teeth is as great as between the second and fourth; below
there is sometimes, but not always, a single tiny tooth, close behind the tip of the rostrum, giving it a bifid appearance; posterior dorsal region of carapace with a scattering of short hairs.

The outer antennular flagella are biramus; the free portion of the shorter ramus is composed of three, four or five articles, the fused portion of from six to nine; the second and third articles of the peduncle are subequal and taken together shorter than the basal article; the blade of the antennal scale is broadly rounded and slightly exceeds the spine; mandible without palp or incisor process; third maxillipeds with exopodite, and reaching by nearly half their length beyond the antennal scale; the first legs fall short of antennal scale, the second legs exceed the third maxillipeds and reach about as far forward as the third, exceeding the antennal scale by two thirds of their carpal joints, the third legs extend beyond the scale by the length of the propodus; the carpus of the second legs appears to be divided rather uniformly into seventeen articles, the merus also is annulated, as well as the distal portion of the ischium.

The fifth abdominal somite is not quite three fourths the length of the sixth, and the sixth slightly more than three fourths the length of the telson, the telson is shorter than the uropods.

Remarks.-Kemp has shown in his notes on the "Hippolytidae" of the Indian Museum ${ }^{7}$ that Hippolysmata moorei Rathbun ${ }^{8}$ and H. intermedia Kingsley ${ }^{9}$ are more properly placed in the genus Lysmata on the basis of the bifurcate, outer antennular flagellum. Kemp remarks (loc. cit.): "The only difference between this genus and Risso's Lysmata is that in the latter the outer antennular flagellum is split and is composed of two unequal rami which are fused basally. In Hippolysmata the flagellum is simple. The character does not seem a very important one, but in my experience is reliable; it is, however, not improbable that further investigation will reveal such a degree of gradation that two distinct genera can no longer be recognized, and in this case all the species must take rank under Lysmata."

By the same token Hippolysmata acicula and paucidens Rathbun ${ }^{10}$ from Hawaii also must be considered as belonging to Lysmata.

In rostral formula and number of carpal articles, our species seems not unlike Miss Rathbun's Lysmata moorei from Porto Rico. The rostrum of the latter, however, is always longer than the eyes, exceeding them by about one half the length of its free portion, reaching at least to the middle of the second segment of the antennular peduncle; usually it is armed with two teeth below, and above with not more than five, the shorter branch of the bifurcate antennular flagellum is composed of twelve free segments and seven to nine fused ones, the free portion being the longer. Our species has the free portion the shorter or at most subequal with the fused portion. Further, in L. moorei the antennal scale is more truncate, the fifth abdominal somite is two thirds the length of the sixth, and the sixth four sevenths the length of the telson.

Hippolysmata porteri Rathbun ${ }^{11}$ is a true Hippolysmata.

[^4]Latreutes fucorum (Fabricius). (Gulf-weed or Sargassum Shrimp).
Palaemon fucorum Fabricius, Suppl. Entom. Syst., 1798, p. 404.
Latreutes ensiferus Stimpson, Proc. Acad. Nat. Sci. Phila., vol. 12, 1860, p. 27. Bate, Rept. Zool. Voy. "Challenger," vol. 24, 1888, p. 583, pl. 104, figs. 1-1g. Rathbun, Bull. U. S. Fish Comm., vol. 20, pt. 2, 1900 (1901), p. 114.

Latreutes fucorum Stebbing, Trans. Roy. Soc. Edinburgh, vol. 50, pt. 2, 1914, p. 290, and synonymy. Verrill, Trans. Conn. Acad., vol. 26, 1922, p. 131, pl. 16, figs. $5-5 b$, pl. 42, figs. $2-2 t$, pl. 44, figs. $1-1 m, 2-2 n, 3$, and synonymy.

Off Florida; from Sargassum; 8 specimens (2 ovigerous).
Off Cuba; from field of Sargassum; 23 specimens (17 ovigerous; 3 with parasitic isopod, Bopyrina latreuticola (Gissler) ${ }^{18}$ in branchial cavity).

Locality?; 2 specimens (1 ovigerous; 1 with branchial parasite, Bopyrina latreuticola (Gissler)).

Verrill remarks:
"This delicate species is common in floating masses of 'gulf-weed' (Sargassum). It is abundant as far north as Vineyard Sound, Mass. (S. I. Smith). Very common in the Gulf Stream further south.

Bermuda (coll. G. Brown Goode). Near the Azores (Milne Edwards); African Coast (Krauss); Porto Rico (Rathbun); Beaufort, N. C. (Hay \& Shore). It has been taken at Bermuda by nearly all collectors. It is nearly always associated with Leander [Palaemon! tenuicornis and the small crab, Planes minutus."

Palaemon tenuicornis Say. (Common Gulf-weed or Sargassum Shrimp).
Palaemon tenuicornis Say, Jour. Acad. Nat. Sci. Phila., vol. 1, 1818, p. 249. Leander tenuicornis Stebbing, Trans. Roy. Soc. Edinburgh, vol. 50, pt. 2, 1914, p. 288, and synonymy. Verrill, Trans. Conn. Acad., vol. 26, 1922, p. 143, pl. 43, figs. 4, 4a, and synonymy.

Off Cuba; from field of.Sargassum; 25 specimens (1 ovigerous).
This species is very common among Gulf-weed (Sargassum) and is very widely distributed in the tropical Atlantic Ocean (Verrill).

## Palaemon ritteri Holmes.

Palaemon ritteri Holmes, Proc. Calif. Acad. Sci., ser. 2, vol. 4, 1895, p. 579, pl. 21, figs. 29-35. Rathbun, Harriman Alaska Exped., vol. 10, 1904, p. 29.

Palaemon sp. Rathbun, Proc. Washington Acad. Sci., vol. 4, 1902, p. 291.
?Palaemon ritteri Rathbun, Proc. U. S. Nat. Mrus., vol. 38, 1910, p. 561.
South Seymour; shore pool, March 28; 1 juvenile.
Tower Island; 1 specimen.
Eden; rock pools, April 6; 1 juvenile. Northeast of Eden; seven fathoms, dredged, April 6; 1 ㅇ ovigerous.

The color of the juvenile specimen from a shore pool on South Seymour is given as "almost transparent in life, with numerous black lines, and with legs brilliant scarlet at the joints."

Miss Rathbun's Palaemon from Clipperton Island surely is this species in spite of the somewhat different rostrum, longer sixth abdominal segment and blacker eyes. The rostrum looks a little abnormal as though possibly one or

[^5]two of the most anterior teeth were wanting, either through malformation or accident, making the toothless part of the rostrum appear longer and more ascending than usual in this species; a count of the rostral teeth gives seven above of which two are on the carapace, and three below; the last dorsal tooth is a little behind the level of the median ventral one. The shorter ramus of the bifurcate antennular flagellum has eighteen free segments, and six fused, virtually in agreement with the count of typical specimens from Magdalena Bay; in these latter there are sixteen to seventeen free segments and six fused ones. The longer sixth abdomen somite might.be an extreme variation, and the blacker eyes due to the preservation.

The Peruvian specimen which Miss Rathbun with some hesitation identified with this species, has the shorter ramus of the bifurcate antennular flagellum composed of twenty free and six fused segments, the carpus of the second legs is as long as the palm and half the length of the fingers together, the fingers are almost as long as the palm, and the fifth abdominal somite is contained one and two thirds times in the length of the sixth.

The species ranges from San Diego, California, (type locality) to Peru (Rathbun).

Macrobrachium jamaicense (Herbst). (Fresh-water Shrimp or Crayfish).
Cancer (Astacus) jamaicensis Herbst, Naturg. d. Krabben u. Krebse, vol. 2, 1792, p. 57, pl. 27, fig. 2.
Palaemon jamaicensis Ortmann, Zool. Jahrb., vol. 5, 1891, p. 729, pl. 47, fig. 7. Rev. Mus. Paulista, vol. 2, 1897, p. 208. Moreira, Archiv. Mus. Nac. Rio de Janeiro, vol. 11, 1901, p. 13, 78.
Bithynis jamaicensis Rathbun, Bull. U. S. Fish Comm., vol. 20, pt. 2, 1900, (1901), p. 123.

Macrobrachium jamaicense Rathbun, Proc. U. S. Nat. Mus., vol. 38, 1910 p. 561, pl. 51, fig. 1.

Colon; $10^{7}, 1$ ㅇ.
Gatun spillway, Colon; 1 juvenile.
The juvenile specimen from the Gatun spillway is very probably this species. It is almost impossible to distinguish the young from those of Macrobrachium olfersii (Wiegmann). ${ }^{13}$

Miss Rathbun (1910) gives the distribution of this species as, "Fresh waters of Pacific slope of America from Lower California to Peru and of Atlantic slope, from Texas to Brazil, including West Indies."

## Urocaris longicaudata (Stimpson).

Urocaris longicaudata Stimpson, Proc. Acad. Nat. Sci. Phila., vol. 12, 1860, p. 39 [108]. Kingsley, Proc. Acad. Nat. Sci. Phila., vol. 31, 1879 (1880), p.424. Rathbun, Proc. Washington Acad. Sci., vol. 11, 1900, p. 155. Hay and Shore, Bull. U. S. Bur. Fisheries, vol. 35, 1918, p. 395, pl. 27, fig. 7.
Off Cuba; from Sargassum; 1 i ovigerous.
This species is not infrequent, though never taken in large numbers ${ }^{14}$ in the area bounded by Beaufort, N. C., and the Bahamas on the North, Porto Rico and Culebra on the East and with Jacuma, Parahyba, Brazil as its southern limit.

[^6]Petrolisthes edwardsii (Saussure). (Scarlet Tissue Crab).
Porcellana edwardsii Saussure, Rev. et Mag. de Zool., ser. 2, vol. 5, 1853, p. 366, pl. 12.
Petrolisthes edwardsii Nobili, Bull. Mus. Torino, vol. 16, no. 415, 1901, p. 11. Rathbun, Proc. U. S. Nat. Mus., vol. 38, 1910, p. 600.

Eden; rock pools, April 6; 6 specimens.
Ranges from the Gulf of California to Ecuador.
Calcinus obscurus (Stimpson).
Calcinus obscuruis Stimpson, Ann. Lyc. Nat. Hist. N. Y., vol. 7, 1859, p. 83. Rathbun, Proc. U. S. Nat. Mus., vol. 38, 1910, p. 596. Nobili, Bull. Mus. Torino, vol. 16, no. 415, 1901, p. 26.

Eden, off Indefatigable Island; 6 specimens.
These specimens are much darker colored than others of the same species from farther north. The dactyls are all double banded, one near the tip and one at the base of the joint; in alcohol, the general coloration of the extremities is a dark, purplish red-brown with white or bluish maculations, the carapace, proximal third of the legs and eyestalks are quite a red brown; where the ground color is lighter, the spots or maculations appear more or less yellowish. A specimen from Chatham Island in the United States National Museum collections shows the coloration noted in this Eden material. Published records seem to indicate that this species ranges from Lower California to Ecuador.

Coenobita clypeatus (Herbst).
Cancer clypeatus Herbst, Naturg. d. Krabben u. Krebse, vol. 2, 1791, p. 22, pl. 23, figs. $A, B$.
Coenobita diogenes Benedict, Bull. U. S. Fish Comm., vol. 20, pt. 2, 1900 (1901), p. 139. Verrill, Trans. Conn. Acad., vol. 13, 1908, p. 438, text-fig. 55 , and synonymy.
Coenobita clypeatus Rathbun, Rapport van de Visscherij en de Industrie van zeeproducten in de Kolonie Curacao, uitgebracht door Prof. Dr. J. Boeke, pt. 2, 1920, p. 327 [11], and synonymy.

Colon; 3 우.
A common West Indian species ranging from Florida to Brazil; also at Bermuda.

Coenobita compressus (Guérin).
Coenobita compressa Guérin, Voy. autour du Monde sur la Coquille par Duperrey, Zool., vol. 2, pt. 2, 1831, p. 29.
Coenobita compressus Faxon, Mem. Mus. Comp. Zö̈l. vol. 18, 1895, p. 52. Rathbun, Proc. U. S. Nat. Mus., vol. 38, 1910, p. 596.

James Island; $1 \mathrm{o}^{7}, 1$ ㅇ.
Miss Rathbun gives the distribution of this species as, "Lower California to Payta, Peru; Galapagos Islands; westward to East Africa."

Hippa denticulatifrons (Miers).
Remipes testudinarius, var. denticulatifrons Miers, Jour. Linn. Soc. London, vol. 14, 1878, p. 318, pl. 5, fig. 2. Balss. Abh. der K. Bayer. Akad. Wissen., vol. 2, Math.-phys. Klasse Suppl., Abh. 10, 1914 p. 92, text-fig. 50.
Remipes adactylus denticulatifrons Ortmann, Zool. Jahrb. Syst., vol. 9, 1896, p. 229, and synonymy.

Hippa denticulatifrons Rathbun, Proc. U. S. Nat. Mus., vol. 38, 1910, p. 595.

Conway Bay, Indefatigable Island; March 28; $1 \delta^{\text {T }}$.
Northeast of Eden; 7 fathoms, dredged, April 6; $1 \sigma^{7}$.
This species is known from the Galapagos Islands and the Indo-Pacific region as far north as Japan.

This is one of the series of scientific papers of the Harrison Williams Galapagos Expedition, under the directorship of William Beebe, sent out by the Department of Tropical Research of the New York Zoological Soc ety. The general account and narrative of the expedition, together with the natural history and photographs of the fauna, are embodied in a volume by William Beebe, published by G. P. Putnam's Sons, under the auspices of the Zoological Society. Its title is "Galapagos; World's End."


[^0]:    ${ }^{1}$ Proc. Washington Acad. Sci., vol. 4, 1902, pp. 275-292, pl. 12, text-figs. 1-4. First form on press April 28, 1924.

[^1]:    ${ }^{2}$ Named in honor of Harrison Williams, Patron and Curator of Ichthyology of the Department of Tropical Research. New York Zoological Society, whose interest and liberality rendered possible the collection of the material upon which this report is based.

[^2]:    ${ }^{3}$ Virbius pleuracanthus Stimpson, Ann. Lyc. Nat. Hist. N. Y., vol. 10, 1871, p. 127. Stimpson described this species as having but one tooth on the inferior margin of the rostrum, as a matter of fact, it has quite uniformly three teeth below.

[^3]:    ${ }_{5}^{4}$ Crust. U. S. Expl. Exped., pt. 1, 1852, p. 564; atlas, 1855, pl. 36, fig. 3a-f.
    5 Virbius gracilis Heller, Sitzb. Wiener Akad. Wissen., vol. 45, 1862, p. 397, pl. 1, figs. 19, 20.
    ${ }_{6}^{6}$ Proc. Calif. Acad. Sci., ser. 2, vol. 4, 1895, p. 576, text-figs. 21-26.

[^4]:    ${ }^{7}$ Rec. Indian Mus., vol. 10, pt. 2, no. 4, 1914, p. 112.
    ${ }^{8}$ Bull. U. S. Fish. Comm., vol. 20, pt. 2, 1900 (1901), p. 115, text-fig. 23.
    ${ }^{9}$ Proc. Acad. Nat. Sci. Phila., vol. 30, 1878, p. (2); Bull. Essex Inst., vol. 14, 1882, pl. 28, pl. 1, fig. 4 .
    ${ }_{10}{ }^{10}$ Bull. U. S. Fish Comm., vol. 23, pt. 3, 1903 (1906), pp. 912, 913, pl. 34, figs. 4, 6.
    ${ }^{11}$ Revista Chilena Hist. Nat., vol. 11, 1907, p. 49, pl. 3, fig. 4.

[^5]:    ${ }^{12}$ Bopyroides latreuticola, Amer. Nat., vol. 16, p. 591, text-figs. 6-8. Bopyrina latreuticola Stebbing, Trans. Roy. Soc. Edinburgh, vol. 50, pt. 2, 1914, p. 301.

[^6]:    ${ }^{13}$ Arch. f. Naturg., vol. 2, pt. 1, 1836, p. 150, = Palaemon spinimanus von Martens, Arch. f. Naturg., vol. 35,' pt. 1, 1869, p. 26, pl. ${ }^{2}$, fig. 3 .
    ${ }^{14}$ The U. S. National Museum possesses, in ali, nineteen lots of this species, but two from Florida and one from the Bahamas contain fourteen or more specimens, two lots have four specimens, two, two specimens, and the rest one each.

